Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7-4.2 GHz Band	)	GN Docket No. 18-122
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
	)	
Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11778

COMMENTS OF NOKIA

Nokia respectfully submits these Comments in response to the Commission's July 19, 2019 Public Notice seeking further comments in the above-captioned proceeding. These Comments address the request by the Commission to provide "appropriate technical parameters for terrestrial base stations and end user devices in the band, including transmit power limits and out-of-band emission limits."

While Nokia has already provided extensive coexistence studies of 5G with Fixed Satellite Service (FSS) earth stations based on such data for Base Stations (BSs),[1] we want to augment the record with an additional step for the BS spectrum mask pertaining to the 60dB/1MHz level, requested by AT&T[2]. Specifically, Nokia suggests that the following BS spectrum mask is feasible for high power transmission and large channel bandwidths while

[1] *See* Comments of Nokia, October 29, 2018, Reply Comments of Nokia, December 11, 2018 & Correction of Technical Proposal, Comments of Nokia, December 3, 2018

[2] AT&T May 23 *Ex Parte* (citing Letter from Jennifer D. Hindin, Counsel for the C-Band Alliance, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Oct. 9, 2018);

recognizing that other spectrum mask options could be explored, especially if other interference mitigation techniques such as those based on network management are explored as discussed below:

- -3dBm/1MHz from 0 to 20MHz offset from the 5G spectrum block
- -40dBm/1MHz from 20MHz to 40MHz offset from the 5G spectrum block
- -50dBm/1MHz 40MHz to 50MHz offset from the 5G spectrum block
- -60dBm/1MHz for frequency offset greater than 50MHz.

In addition, we continue to support the following power limits for base stations, consistent with the Commission's proposal in this proceeding:

- 1640 watts EIRP for emission bandwidths less than one megahertz and to 1640 watts per MHz EIRP for emission bandwidths greater than one megahertz; and
- 3280 watts EIRP for emission bandwidths less than one megahertz and 3280 watts per MHz EIRP for emission bandwidths greater than one megahertz in rural areas

Moreover, we agree with AT&T's statement that the "OOB emissions mask that the CBA has proposed for mobile user equipment ("UE") operating in the C-band is excessively restrictive and would seriously impair the deployment of 5G services in the U.S." and that the Commission should "[d]etermine a more appropriate user device out-of-band ("OOB") emissions limit than the mask proposed by the CBA." In addition, there are network management techniques available such as power control, putting users on a different band in proximity of the FSS earth stations, etc. that could be considered to mitigate any potential interference from UEs to the FSS earth stations. Network management techniques could also be explored to mitigate any potential interference from 5G BSs such as beam nulling towards the FSS earth stations, reducing the transmit

power of the BSs in vicinity of the FSS earth stations, etc.

Nokia looks forward to continuing to work with the carriers, CBA and the Commission on the techniques pertaining to filtering and network management to mitigate any potential interference from 5G into FSS earth stations and accelerate the clearing of the band for 5G usage.

Respectfully submitted,

Nokia

/Brian Hendricks/

Prakash Moorut
Bell Labs and CTO

Brian Hendricks
Jeffrey Marks
Government Relations

Nokia
601 Pennsylvania Avenue, NW
South Building, Suite 900
Washington, DC 20004

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